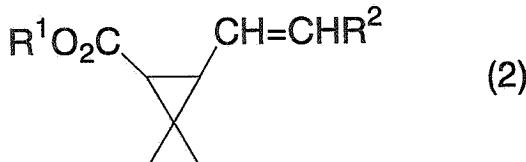


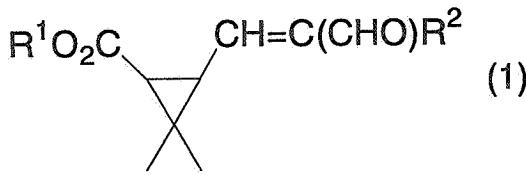
## CLAIMS

1. A method for producing a (1-alkenyl)cyclopropane compound represented by the formula (2):



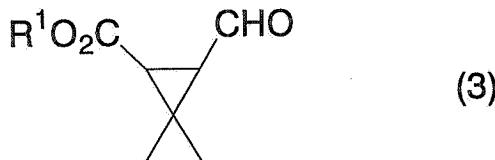
5

wherein R<sup>1</sup> and R<sup>2</sup> are the same or different, and independently represent a hydrogen atom, an optionally substituted alkyl group, an optionally substituted alkenyl group, an optionally substituted alkynyl group, an optionally substituted aryl group or an optionally substituted aralkyl group,  
 10 which comprises bringing a (2-formyl-1-alkenyl)cyclopropane compound represented by the formula (1):



15 wherein R<sup>1</sup> and R<sup>2</sup> are the same as defined above, into contact with a palladium catalyst.

2. The method according to claim 1, wherein the (2-formyl-1-alkenyl)cyclopropane compound is the (2-formyl-1-alkenyl)cyclopropane compound obtained by reacting a formylcyclopropane compound represented by the formula (3):



wherein  $R^1$  is as described in claim 1, with an aldehyde compound represented by the formula (4):



5 wherein  $R^2$  is as described in claim 1.

3. The method according to claim 1 or 2, wherein  $R^1$  represents a straight chain, branched chain or cyclic alkyl group having 1 to 10 carbon atoms, an unsubstituted aralkyl group having 7 to 8 carbon atoms, or an aralkyl group having 7 to 8 carbon atoms substituted with at least one group selected from a fluorine atom, an alkyl group having 1 to 3 carbon atoms, an alkoxy group having 1 to 3 carbon atoms and an alkoxyalkyl group having 2 to 3 carbon atoms,

10  $R^2$  represents a straight chain, branched chain or cyclic alkyl group having 1 to 7 carbon atoms, an alkenyl having 3 to 5 carbon atoms or an alkynyl group having 3 to 5 carbon atoms,

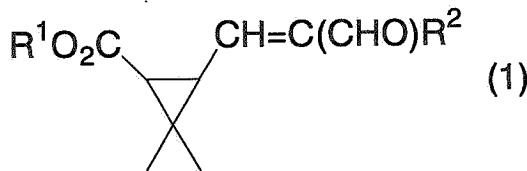
15 a straight chain, branched chain or cyclic alkyl group having 1 to 7 carbon atoms substituted with a fluorine atom or atoms, a phenyl group or groups or an alkoxy group or groups having 1 to 3 carbon atoms,

20 an alkenyl having 3 to 5 carbon atoms substituted with a fluorine atom or atoms, a phenyl group or groups or an

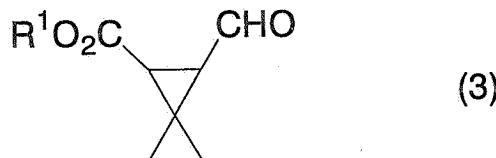
alkoxy group or groups having 1 to 3 carbon atoms, or an alkynyl group having 3 to 5 carbon atoms substituted with a fluorine atom or atoms, a phenyl group or groups or an alkoxy group or groups having 1 to 3 carbon atoms.

5           4. The method according to claim 3, wherein R<sup>1</sup> is a  
straight chain alkyl group having 1 to 4 carbon atoms.

5. A method for producing a (2-formyl-1-alkenyl)cyclopropane compound represented by the formula (1):



10 wherein R<sup>1</sup> and R<sup>2</sup> are the same or different, and  
independently represent a hydrogen atom, an optionally  
substituted alkyl group, an optionally substituted alkenyl  
group, an optionally substituted alkynyl group, an  
optionally substituted aryl group or an optionally  
substituted aralkyl group,  
15 which comprises reacting a formylcyclopropane compound  
represented by the formula (3):



20 wherein R<sup>1</sup> is the same as defined above, with an aldehyde compound represented by the formula (4):



wherein  $\text{R}^2$  is the same as defined above, in the presence of a base.

6. The method according to claim 5, wherein the base  
5 is a primary or secondary amine compound.

7. The method according to claim 6, wherein the reaction is carried out in the presence of an acid.

8. The method according to claim 7, wherein the acid is a carboxylic acid.

10 9. The method according to claim 5, wherein the aldehyde compound represented by the formula (4) is propanal.

10. The method according to claim 5, wherein  $\text{R}^1$  represents a straight chain, branched chain or cyclic alkyl group having 1 to 10 carbon atoms, an unsubstituted aralkyl group having 7 to 8 carbon atoms, or  
15 an aralkyl group having 7 to 8 carbon atoms substituted with at least one group selected from a fluorine atom, an alkyl group having 1 to 3 carbon atoms, an alkoxy group having 1 to 3 carbon atoms and an  
20 alkoxyalkyl group having 2 to 3 carbon atoms,

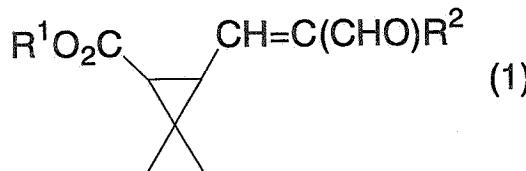
$\text{R}^2$  represents a straight chain, branched chain or cyclic alkyl group having 1 to 7 carbon atoms, an alkenyl having 3 to 5 carbon atoms or an alkynyl group having 3 to  
25 5 carbon atoms,

a straight chain, branched chain or cyclic alkyl group having 1 to 7 carbon atoms substituted with a fluorine atom or atoms, a phenyl group or groups or an alkoxy group or groups having 1 to 3 carbon atoms,

5 an alkenyl having 3 to 5 carbon atoms substituted with  
a fluorine atom or atoms, a phenyl group or groups or an  
alkoxy group or groups having 1 to 3 carbon atoms, or an  
alkynyl group having 3 to 5 carbon atoms substituted with a  
fluorine atom or atoms, a phenyl group or groups or an  
10 alkoxy group or groups having 1 to 3 carbon atoms.

11. The method according to claim 10, wherein R<sup>1</sup> is a straight chain alkyl group having 1 to 4 carbon atoms.

12. A (2-formyl-1-alkenyl)cyclopropane compound represented by the formula (1):



15 wherein R<sup>1</sup> and R<sup>2</sup> are the same or different, and  
independently represent a hydrogen atom, an optionally  
substituted alkyl group, an optionally substituted alkenyl  
group, an optionally substituted alkynyl group, an  
optionally substituted aryl group or an optionally  
substituted aralkyl group, provided that R<sup>2</sup> does not  
represent a hydrogen atom or a methyl group.

13. The compound according to claim 12, wherein  $R^1$

represents a straight chain, branched chain or cyclic alkyl group having 1 to 10 carbon atoms, an unsubstituted aralkyl group having 7 to 8 carbon atoms, or

an aralkyl group having 7 to 8 carbon atoms

5 substituted with at least one group selected from a fluorine atom, an alkyl group having 1 to 3 carbon atoms, an alkoxy group having 1 to 3 carbon atoms and an alkoxyalkyl group having 2 to 3 carbon atoms,

R<sup>2</sup> represents a straight chain, branched chain or  
10 cyclic alkyl group having 1 to 7 carbon atoms, an alkenyl having 3 to 5 carbon atoms or an alkynyl group having 3 to 5 carbon atoms.

a straight chain, branched chain or cyclic alkyl group having 1 to 7 carbon atoms substituted with a fluorine atom  
15 or atoms, a phenyl group or groups or an alkoxy group or groups having 1 to 3 carbon atoms,

an alkenyl having 3 to 5 carbon atoms substituted with a fluorine atom or atoms, a phenyl group or groups or an alkoxy group or groups having 1 to 3 carbon atoms, or an  
20 alkynyl group having 3 to 5 carbon atoms substituted with a fluorine atom or atoms, a phenyl group or groups or an alkoxy group or groups having 1 to 3 carbon atoms.

14. The compound according to claim 13, wherein R<sup>1</sup> is a straight chain alkyl group having 1 to 4 carbon atoms.